

# Institutsseminar Kern- und Hadronenphysik

Dec. 18, 2017 at 2 p.m. c.t.  
HS Kernphysik, Becherweg 45

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Mainz

## **The proton-proton fusion reaction**

I will present a calculation of the rate of the proton-proton fusion reaction in chiral Effective Field Theory (EFT) with an analysis of the accompanying uncertainties.

A detailed comparison with a prior chiral EFT result involves (i) a simple analytic derivation of the finite-volume correction to capture and fusion cross sections calculated in a discrete basis and (ii) a pionless EFT calculation of the p-wave contribution to the fusion cross section.

Important nuclear physics implications of an ongoing measurement of the muon-deuteron capture rate by the MuSun collaboration at PSI will also be discussed.